

# Family Involvement, Auditing, and Small Business Debt Financing: Evidence from the U.S.

by

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## **Abstract**

Small- and medium-sized enterprises (SMEs) play an important role in modern business society but still face difficulties in debt financing. Literatures suggest that family involvement and external auditing can assist small firms to mitigate agency problems that impede the access to loans, and the liability of newness could be a factor in small business debt financing. Our research examines how family involvement affects cost of debt upon the different choices on external auditing, and how the liability of newness works. We find when engaging external auditing, family involvement is not a significant influencer in reducing the cost of debt for small businesses. Besides, when the external auditing is not engaged, family involvement becomes a significant influencer. We also find that when external auditing is not engaged, family involvement works in reducing the cost of debt only when the liability of newness is a factor.

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## **I. Introduction**

Small-and medium-sized enterprises (SMEs) play an important role in business globally. The significant role of small businesses in creating more job opportunities, fostering new businesses and organizations, and advancing local communities' economic development has been fully recognized (e.g., Astrachan, Zahra, & Sharma, 2003; Heck & Stafford, 2001). According to the 2003 National Survey of Small Business Finance (NSSBF), family-owned businesses form the majority of small businesses, consisting of more than 80% of small businesses in the United States. The expanding interest in family business can be observed from a large and growing body of literature on the family business field, the number of family business programs universities and colleges offer, the large amount of research funding granted by private donors and foundations, and the increased membership in family firm associations (Sharma, 2004).

One of the most critical factors in the life of small businesses is accessible funding. Ultimately, money is essential to small businesses' growth. Being the majority of small firms, family businesses are faced with "money" concerns. Financing is central to the development of small firms. It is not only essential for small business startups but also for survival and development (e.g., Storey, 1994; Cavalluzzo, Cavalluzzo, & Wolken, 2002; Chua et al., 2011). Small firms' need for debt financing is important for several reasons. First, according to the 2003 NSSBF, around 25 percent of small firms have been in business for less than eight years. A relatively large proportion of small businesses are in the phase of fast growth – a time when the need for financing arises. Second, small businesses do not have enough access to credit (Berger & Udell, 1998; Bitler et al., 2001). Typically, large firms have the option to obtain credit in public debt financing markets (Ang, 1991); however, small businesses' dependency on financial

intermediaries, especially commercial banks, is high (Berger & Udell, 1995). This dependency is an obstacle for small firms seeking to obtain loans. Third, small firms are usually closely held, making it difficult for banks to obtain the necessary reliable information on small firms for their screening processes. This problem of asymmetrical information negatively affects small firms' debt financing. According to Berger and Udell (1998), small firms usually cannot credibly convey their quality to their lenders. In addition, small businesses may have difficulty communicating the high quality of their products or services. Such quality is best built on reputations or non-exploitive behavior to overcome informational opacity problems.

As a result of the severe asymmetry information problem faced by small firms, the two most effective solutions are worth noting. The first is family involvement. According to 2003 NSSBF, the majority of small firms in this survey are family-owned. A small firm with family involvement has different characteristics than other small businesses. We will also examine the effect of family ownership and management on family firms. Some scholars believe that owner-managed businesses have immaterial even zero agency costs (Jensen & Meckling, 1976; Fama & Jensen, 1983; Ang, Cole, & Lin, 2000). This low level of agency costs is considered to come from less asymmetric information. The second method is external auditing. Audited financial statements can provide reliable financial information to banks. Consequently, audited statements should to some extent mitigate the agency problems faced by small firms. Nevertheless, what role external auditing plays in a small business's debt financing is a question worth investigating.

A large body of literature has confirmed the principle of the liability of newness (Stinchcombe, 1965; Carroll, 1983; Phillips & Kichoff, 1989; Watson & Everett, 1996). As well, Coleman (2004) confirm the link between the liability of newness and small business's access to debt financing. The liability of newness principle argues that younger firms lack trusting

relationships with individuals and organizations. Moreover, as these young firms grow, they gain business wisdom and earn credibility as a result. In the long term small firms will have more opportunities to build trusting relationships with banks. Petersen and Rajan (1994) argue that the duration of the relationship is important to successful debt financing. Furthermore, Diamond (1991) further notes that the longer a borrower has been taking out loans, the more likely the business will survive, and its owner will gain a high level of trust with the bank. From this perspective, the liability of newness will be a working factor in small businesses debt financing.

Based on these points, the discussion in this study considers how family involvement affects small businesses' debt financing whether external auditing is performed or not. Particularly, family involvement in the context of this paper refers to family ownership and family management. This study will additionally examine the role that the age of a business plays in small firms' debt financing.

We have arranged our discussion of our research topic in five sections. Section I is the introduction to our research. In section II, we will re-examine literature on our topics. Moreover, we will provide a comprehensive theoretical background and hypotheses for our research questions. In section III, we will draw out our methodology and models. In addition, we will discuss descriptive statistics on our variables. In section IV, we will present and then discuss the results of our tests. In section V, we will draw conclusions to our research questions and recommend future analysis.

Before this research, how family involvement can affect small businesses' debt financing on the condition whether or not businesses engaged in external auditing is theoretically and empirically relatively impenetrable. Through discussing the theoretical background on family involvement, external auditing, and the effect of firm age along with providing supporting



evidence on the relationships among family involvement, external auditing, and agency problems in small businesses, the present study makes several noteworthy contributions to the entrepreneurial finance, family business, as well as agency cost literature. Furthermore, it contributes to the liability of newness theory by suggesting how it relates to external auditing in the context of family business. That is, when external auditing is excluded, family involvement works only when the liability of newness is a factor. Nonetheless, because of unavoidable problems concerning sampling and the lack of longitudinal data, future analysis and confirmation are needed.

This study will be of interest to entrepreneurs and practitioners for showing that family involvement in small business will not continuously improve the cost of debt. According to our results, to lower the cost of debt, family involvement works on the condition that external auditing is not performed. Moreover, family ownership and management should only be involved before a small firm reaches its five-year milestone.

## **II. Theoretical Background and Hypotheses**

### ***Family involvement, owner-manager agency problem and cost of debt***

Agency problems have been a heated topic in the field of corporate governance for a long time. Ross (1973) establishes the concept of agency problems as a principal-agent problem in which a conflict of interest arises from the separation of ownership and management. Jensen and Meckling (1976) view agency theory as a kind of relationship in which one party, the principal, delegates work to a second party known as the agent. Since these two parties usually have different interests, and the agent has equipped with more information than the principal, the principal cannot make sure that the agent does not take advantage of the principal and is always

serving on the principal's best interests. Jensen and Meckling define "agency costs" as the costs of all activities and operating systems designed to align the interests and/or actions of managers (agents) with the interests of owners (principals). As small businesses grow, they deal with various agency problems, including internal and external ones. The tactics used to tackle these problems will likely lead to agency costs for small firms.

Chua et al. (2011) define that family involvement in small businesses can be separated into four categories: ownership, management, governance and transgenerational succession. In our paper, we primarily pay attention to the first two types of involvement. In other words, we define family involvement as family ownership and family management. In the sample that Berger and Udell (1995) use in their study, 89% of small firms were owner-managed and 80% of the small firms were owned by a single family. According to the 2003 NSSBF, owner-managed and family-owned small firms are still the majority.

In the setting of family business, agency costs are in another presence to some extent. Business scholars agree that owner-managed businesses have immaterial even zero agency costs (Jensen & Meckling, 1976; Fama & Jensen, 1983; Ang, Cole, & Lin, 2000). Stewart (2003) argues that this conclusion can be extended to a family firm's background. Family involvement as we define it in this paper may mitigate owner-manager agency problems at a specific level. Since the owner-manager relationship is an internal one, it is an endogenous agency problem. Using data collected from 1,411 small privately held family and non-family US firms, Chrisman, Chua and Litz (2004) have shown that agency problems in family firms are generally less serious than those in non-family firms.

However, Schulze, Lubatkin, Dino, and Buchholtz (2001) point out that agency costs can not be lessened by private ownership, owner management and family ownership. The logic behind

this is that although the agency costs stemming from the separation of ownership and management may be mitigated in family firms to some degree, there are other different sorts of issues arise from altruism (Gomez-Mejia et al., 2002; Schulze et al., 2001). Coincidentally, Morck and Yeung (2003) hold the same view. They assert that in most countries, for the reason that managers only act for the major owning family other than shareholders, family firms' structures create their own series of agency problems. More interestingly, Blanco-Mazagatos et al. (2007) believe that agency costs in family firms will change if we view family firms as dynamic systems. Specifically, they reveal that when the first generation runs the business, the negative effects of an insufficient financial structure are mitigated by lower agency costs. Moreover, after a new generation joins the firm, the amplification of the firm's financial structure should compensate the increasing agency costs.

At this point, we can conclude that family involvement might mitigate the owner-manager agency problem but might not be able to alleviate other endogenous agency problems arising from the nature of family businesses. Specifically, family businesses burden the conflicts between the controlling family and other shareholders as well as the conflicts between different generations. These two kinds of contradictions may bring new types of agency problems to family firms.

Regarding the relationship between family involvement and the cost of debt financing, Anderson, Mansi, and Reeb (2003) have shown that founding family ownership relates to a lower cost of debt financing not statistically but empirically. Based on our previous argument that it is uncertain how family involvement affects agency cost in small firms, the results conveyed by Anderson, Mansi, and Reeb (2003) are not hard to conceive.

### ***External auditing, borrower-lender agency problem and cost of debt***

Since it plays the role of enforcing the application of proper accounting policies (Francis & Dechum, 2008), auditing is a vital part of the corporate governance system (Francis, Khurana, & Pereira, 2003). Chow (1982) claims that hiring external auditors is an effective way to control the conflict of interests between managers and shareholders. The point of this analysis is that the managers, or the audit committees of firms, will be responsible for choosing the appropriate external auditors to be part of the corporate governance system. (Anderson, Mansi & Reeb, 2004). Similarly, Darmadi (2012) stresses that independent audits are considered one of the external corporate governance mechanisms to moderate agency problems and lessen asymmetric information. Niskanen, Karjalainen, and Steijvers (2011) claim that auditing is a reliable tool for controlling agency costs for three reasons. First, by reducing the information asymmetry of accounting numbers, auditing plays an essential role in increasing the reliability of accounting profits. Second, external auditing is proper proof of appropriate internal control mechanisms. Finally, auditing can reveal a firm's level of reputability.

Agency problems come in different forms as small firms grow. Although managers could employ external auditing to mitigate the manager-shareholder conflict of interests, its primary purpose is to provide confirmable financial statement information to all parties engaging in the firm, including internal and external stakeholders. In terms of debt financing, agency problems refer to asymmetric information and the interest conflicts between the borrower and the lender (Ross, 1973; Leland & Pyle, 1977; Myers, 1977; Smith & Warner, 1979). Unlike the agency problems the owner and the manager experience, borrower-lender agency problems are exogenous. If revealing information does not divulge information that create values to competitors, external auditing is the most efficient way to deal with this kind of agency problem

(Chua et al., 2011). Furthermore, external auditing can be used as a tool for disclosure. Literature on small businesses debt financing has confirmed that audited accounts are rudimentary in the banks decision on whether approve a loan or not (Berry et al., 1987; Berry, Crum & Waring, 1993; Deakins & Hussain, 1994). If they do decide to provide a loan, external auditing will also play an essential role in determining the interest rate they charge.

A large volume of published studies, which consider the family firm as a special ownership structure, describe the relationship of external auditing choices, and ownership structure as well as concentration of family firms. Following the audit fees model that Simunic (1980) develops, several studies have used audit fees as their dependent variable in empirical work. Ismail and Kamarudin (2012) contest that family firms are associated with higher audit fees, which are deputies for higher audit risk. As well, they suggest that in family firms the financial expertise of an audit committee could mitigate the family members' dominant impact on the board. Hope, Langli, and Thomas (2012) likewise have constructed a research model using audit fees as dependent variables, which is nevertheless a proxy for auditing efforts. They find that increasing the proportion of board members of the major owning family could reduce audit fees. A recent study by Srinidhi, He, and Firth (2010) have shown that while family firms typically pay lower audit fees than non-family firms due to lower risk, family firms with strong governance may be an exception. More importantly, Srinidhi, He, and Firth discuss the incentives of family businesses to use strong corporate governance to help reduce agency costs, which we have discussed previously. Desender et al. (2012) analyze the relationship between board characteristics and audit fees. Although audit fees are dependent variables because they are just proxies for the monitoring function of the board, some of the results of the models Desender et al. have developed are relevant to our studies. They suggest that external auditing fees are

contingent upon the type of controlling shareholder. Family firms are one type of controlling shareholder. On the other hand, Ali and Lesage (2012) see no significant relation between audit fees and family shareholding. In France, family firms pay primary interest on the relationship between audit fees and different shareholdings, including governmental, institutional, and family shareholding.

Another main part of studies tends to employ auditing choices variables as dependent variable, examining the relationship between auditing choices and the ownership structure in family firms. Using the 2003 National Survey of Small Business Finances of US, Allee and Yohn (2009) find a relationship between the sophistication of financial statements and particular organizational characteristics. Hope, Langli and Thomas (2012) consider the categorical variable, whether or not a firm chooses Big 4 company as its auditor, as a dependent variable. They have found that firms with a higher potential agency cost tend to hire a higher-quality firm such as Big 4 company to audit their financial statements. However, Langli and Thomas cannot find any evidence that the demand for Big 4 will be different when the CEO of the firm has family ties with the primary shareholders. Srinidhi, He and Firth (2012) use the data of US listed firms to show that family firms are more inclined to use specialist auditors than non-family firms. Still, their evidence is not so strong. However, a case study in Indonesia by Darmadi (2012) has revealed that the association between ownership concentration and demand for high-quality auditors becomes negative when a firm's controlling shareholder is a family. He argues, furthermore, that family controlled firms tend to sustain opaqueness gains. Moreover, Niskanen, Karjalainen and Steijvers (2011) use data from the sample of private Finnish firms between 2000 and 2006 to support their argument that family firms are less likely to hire a Big 4 auditor. Even more definitive is Collis, Jarvis and Skerratt's (2004) UK-based study that shows only

when a company is not entirely owned by a single family, its demand for auditing is significant. Expanding this 2004 study, Collis (2010) argues that while the findings are true for the UK, they are not for Denmark.

The third body of literature focuses on accounting in the context of family business. Carey and Guest (2000) conduct a study to determine the optimal external audit interval for private and family-controlled firms. They suggest that the optimal interval is decided by the trade-off between the audit cost and the losses ensuing from the absence of auditing. Agrawal and Chadha (2005) examine the relationship between specific corporate governance mechanisms and the probability of a firm having a serious accounting problem through the lens of a restatement of its earnings. Their study reveals if the CEO of a firm belongs to the founding family, the possibility of restatement is higher.

In their consideration of the benefits related to external auditing, Allee and Yohn (2009) find that equipped with audited financial statements, firms will benefit from more noteworthy access to credit. In addition, they observe that small firms with accrual-based financial statements can attain credit at a lower cost. It is significant that this paper not only discusses the association of audit choices with access to credit for small firms, but also the relationship between financial information and the cost of debt. This research can be extended to family firms because literature has shown that, generally speaking, small firms are family-owned and owner-managed (Bolton, 1971; Carsberg et al., 1985; Collis & Jarvis, 2000).

Recently, Gul, Zhou, and Zhu (2013) explore this topic in a global context. Using data culled from over 90,000 firm-year observations between 1994 and 2006, they show that the cost of debt is lower when firms are audited by prestigious auditors, notably Big N auditors, especially in countries that have strong investor protection mechanisms. Moreover, they find that firms with

more informational problems, such as problems with high information asymmetry, may only obtain lower debt cost when using prestigious auditors if they are located in countries with stronger investor protection.

### ***Family involvement and external auditing in small business debt financing hypotheses***

Agency theory literature contends that family businesses are more likely to have minimized owner-manager agency costs (e.g., Jensen & Meckling, 1976; Fama & Jenson, 1983). We can conclude from this literature that family involvement reduces the agency costs from an internal perspective. Additionally, lower owner-manager agency costs reduce default risk by increasing the cash flow available to debt, *ceteris paribus* (Chua et. al, 2011).

Classical agency theory claims that differing interests and asymmetric information cause agency problems (Ross, 1973; Myers, 1977; Leland & Pyle, 1977). Asymmetric information problems mainly occur as a result of adverse selection and moral hazard. According to Akerlof (1970), signaling and screening are two primary solutions to adverse selection problems. Signaling is the concept that one-party credibly conveys certain information about itself to another party with the aim of depleting the asymmetric information problem. Screening is another strategy for combating asymmetric information (Spence, 1973). Family involvement in small firms can to some extent alleviate the risk of adverse selection because lower owner-manager agency costs have already reduced the default risk. Family involvement can additionally be seen as signaling to lenders that a borrower is low risk.

If we look at signaling and screening from a different perspective, that is, signaling as a borrower-active movement and screening as a lender-active movement, screening should be distinguished from signaling, just as Spence (1973) argue. This differentiation implies that the



informed agent moves first. The informed agent in the borrower-lender relationship for small firms is the bank. At the same time, external auditing can provide authentic objective financial information to lenders from which they can choose what is relevant to the screening process. From the bank's perspective external auditing is a reliable information source to help correct information asymmetry.

Small firms' willingness to engage an external auditor is a form of signaling as well. Small firms, which tend to be privately owned, have the option of undertaking external auditing. Small firms choosing to hire an independent external auditor to validate their cash flow projections can be seen as a signal of the faith in their financial statements (Dharan, 1992).

From agency theory literature we can conclude that family involvement has particular effects on internal agency problems, which are known as endogenous agency problems. External auditing may simultaneously affect borrower-lender agency problems, that is, exogenous agency problems. External auditing can be additionally used to mitigate agency problems by taking on signaling and screening roles. Based on the above argument, we develop two hypotheses on family involvement and external auditing for small firms' debt financing:

*H1: When external auditing is engaged, family involvement is not a significant influencer in reducing the cost of debt for small businesses.*

*H2: When external auditing is not engaged, family involvement becomes a significant influencer in reducing the cost of debt for small businesses.*

Stinchcombe introduced the term, "liability of newness," in 1965. The liability of newness indicates that when a firm is relatively young, in other words, relatively new, it faces more

difficulties and a greater risk of failure than an older firm does. According to Stinchcombe, young organizations are more likely to fail for four reasons. First, new organizations need to learn new roles. Second, new organizations have not established standard routines and principles to solve problems and manage emergencies. Third, new organizations have not established credibility. Fourth, new organizations have less steady ties with the primary users of their services.

Previous literature has confirmed that the liability of newness does play a critical role in the growth of organizations. In fact, it may lead to their failure. Using 52 data sets, Carroll (1983) notes that organizations' death rate declines as firms grow older. In fact, Nucci (1996) argues that regardless of industry, size or region, business dissolution declined with age in U.S. firms. Phillips and Kirchoff (1989) set the milestone at six to seven years; that is, three out of five new firms are terminated within the first six to seven years.

Other than recounting the reasons Stinchcombe cited, Freeman et al. (1983) conclude that there are other explanations for the liability of newness. One is that new organizations have low levels of legitimacy. As time goes by, external sources of support will be tied as the organizational structures become more stable. Hannan and Freeman (1989) provide another reason: new organizations are typically highly vulnerable to environmental shocks. Coleman (2004) observes that the liability of newness shows the same properties as asymmetric information. Furthermore, she points out that new organizations lack relationships of trust and readily available, reliable audited financial statements. Various scholars have shown that when faced with incomplete, unreliable information, lenders will deny credit or charge a higher interest rate (Pettit & Singer, 1985; Stiglitz & Weiss, 1981; Weinberg, 1994). Such literature indicates that the liability of newness does affect the cost of debt for organizations, including small

businesses.

It has been shown that newer firms have a larger demand for external debt financing but are less likely to gain access to it (Berger & Udell, 1998; Coleman & Cohn, 2000). It has also been confirmed that young firms face particular difficulties and are more likely to fail (e.g., Stinchcombe, 1965; Freeman et al., 1983; Freeman, 1984). According to Chua et al. (2011), family involvement enhances the ability of a young firm to obtain debt financing by borrowing family social capital. The liability of newness principle affects the cost of debt for small businesses; as a result, their age cannot be ignored. For that reason we propose H3:

*H3: When external auditing is not engaged, family involvement reduces the cost of debt only when the liability of newness is a factor.*

### **III. Methodology**

Using data from 2003 National Survey of Small Business Finances (NSSBF), we arrange tests in the following sequence. First, we separate our samples into two groups based on whether or not a small firm engaged in external auditing. Then, we run two OLS regression models in these two subsamples to test our hypotheses H1 and H2. Then, after controlling the age of small businesses, the same models and tests are again examined to reveal dynamic effects. According to the U.S. Small Business Administration's Office of Advocacy, about half of all new small businesses fail in five years. Based on that figure and on other currently available evidence, it is reasonable to consider five years as the "survival point" in a small business's life cycle. Therefore, we choose five years as the cutoff for examining the effect of the liability of newness in testing our hypothesis H3.

### *Sample*

We use data from the 2003 NSSBF to investigate drivers related to the cost of debt for small businesses, the role of auditing by a professional accountant, and family involvement in the entire process. Allee and Yohn (2009) attest that the NSSBF dataset is one of the most comprehensive datasets on small businesses available. The 2003 NSSBF is the fourth NSSBF survey to gather financial data from small businesses with fewer than 500 employees. It includes the functionally financial information of 4,240 US small businesses. The direct population of the survey consists of U.S. domestic, non-farm, for profit, non-financial, nongovernmental small businesses that were in operation as of December 31, 2003. This database defines family firms as businesses that are not cited on the stock exchange with more than half of the firm's shares are claimed by a single family (Steijvers & Voordeckers, 2009). We eliminate observations with missing data, getting an available sample of 1,741 small firms with different levels of family involvement.

This dataset from the 2003 NSSBF culled information on the characteristics of family firms; the sources of financial services they use; income and expenses information; and balance sheet information. Besides, the questionnaire is designed and organized in a scientific manner, beginning with a screening procedure.

Nevertheless, the dataset has inherent drawbacks. First, selection biases may have occurred because a large amount of data is missing. Second, the responses of the survey are subjectively reported, thus making them difficult to verify. Third, there may have been response biases due to non-responses and the time points of those who responded.

### *Variables and univariate analysis*

In this section we will discuss dependent variables, independent variables, and control variables. In Table 1 we present definitions and explanations of all the variables in this study.

[Insert Table 1 here]

Since our primary research interest lies in determining whether or not external auditing choices and family involvement jointly affect small firms' borrowing cost, we use these two factors as two dimensions to present descriptive statistics. FAMILYOWNED is a dummy variable, which equals one when a small firm is family-owned; otherwise, it equals zero. AUDIT is also a dummy variable. It too equals one when a small firm employs a professional accountant to audit its financial statements. We show these two dummies' statistics in Table 2 and Table 3.

[Insert Table 2 here]

[Insert Table 3 here]

From the tables above we can observe that the majority of small businesses we studied, 76.05% of our sample, are family businesses. This high percentage confirms the importance of incorporating family involvement in the research of small businesses. For the variable AUDIT, we can see that only a fraction of small businesses in the samples chose to be audited by a professional accountant. Among the 1,741 responses only 8.62% choose to partake in external auditing. Moreover, among the 1,324 family-owned small firms in our sample, only 96

respondents, or 7.25% of the sample, chose to partake in external auditing. Verifying that demand for auditing is typically associated with companies that are not wholly family-owned (Niskanen, Karjalainen, & Steijvers, 2011), this low percentage raises the question of why some family-owned small firms choose to be audited while others do not.

#### Dependent Variable

The dependent variable in this study is COST, or the borrowing cost for a small business. COST is the interest rate paid by a small business for the most recently approved loans. This rate is used instead of the average on all loans because according to Wu and Chua (2012), it is more closely associated with the marginal cost of debt financing.

#### Independent Variables

AUDIT is a dummy variable that shows the effect of auditing involvement on the cost of debt. Specifically, we use AUDIT as a tool to separate our full sample into two groups. Our first independent variable is FAMILYOWNED, which equals one when a small firm is family owned. The main goal of this variable is to highlight the effect of family ownership. To validate the effect of family management we included a FAMILY INVOLVEMENT variable in the independent variables. FAMILY INVOLVEMENT is the result of multiplying FAMILYOWNED and OWNMANAGE (it equals one when at least one of the firm's owners is also a manager). FAMILY INVOLVEMENT equaling one indicates that a small firm is family-owned and owner-managed. Agency theory asserts that a business's executing performance can be enhanced and its ability to service debt can be improved by family ownership and management (Wu & Chua, 2012).

#### Control Variables

OWNMANAGE is our first control variables. It equals one when at least one of the firm's

owners is also a manager. OWNMANAGE is a proxy for the less level of separation of ownership and management.

Audretsch and Elston (2002) conclude that a firm's size is an essential factor in determining its ability to borrow. We measured the firm's size by the log of total assets, LNATA, as well as by the number of employees, EMPLOY. Another control variable in our model is LNLOAN, which equals the log of total number of loans made to a small firm. It is a proxy for a firm's current debt situation. Carroll and Mosakowski (1987) observe that small firms are usually reflections of their owner-managers. Based on this theory, firm owners' characteristics can influence borrowing cost. The control variables representing owners' personal characteristics are the weighted average age of owners, or AGEOWN. As well, we included its square, AGEOWNSQ, to obtain the nonlinear effect of age (Ang, Chua, & Bowling, 1979). In addition, we use the following two control variables: EXPERIENCE, which stands for the weighted average years of the owners' work experience, and EDUCATION, which indicates the weighted average level of their education. We then used two dummy variables, COMPANY, which shows whether one of the owners is another company, and CORPORATION, which equals one when a small firm's business structure is a corporation (otherwise, it equals zero).

Table 4 is a descriptive analysis of all the variables in our study.

[Insert Table 4 here]

The dependent variable, COST, indicates the interest rate that banks charge. Its minimum value is 0.5% and maximum value is 30%. The large range of interest charged suggests that small businesses' debt financing situations vary in different entities. It naturally brings up the

question of why some small businesses are charged a much lower interest rate than others.

Table 5 shows descriptive statistics with AUDIT=0 or 1 for all variables. Table 5 is a comparison table aiming to examine descriptive analysis statistics differences in major variables after controlling the external auditing.

[Insert Table 5 here]

The mean interest rate charged to small businesses audited by a professional accountant is lower than that of businesses who were not. Specifically, the mean interest rate charged to small firms who choose to engage in external auditing is 5.245%; for others, it is 5.925%. The difference is 0.679% and is significant at a 0.1% level. From Table 5, we can also determine that the small firms choosing to hire a professional accountant show the following attributes: they have more assets and higher loans; they have more employees; and their owners are older and appear to have more experience. These statistics are just initial results achieved by comparing the means; further tests and discussion are required to determine if they are confirmable.

We present the correlations for all the variables in Table 6. We have run VIF tests, and the average is below 10, indicating that multicollinearity is not a concern.

[Insert Table 6 here]

### ***Models***

We perform two series of regression models to discover our study's research topics. We should first clarify that the main variables of interest in our study are FAMILYOWNED, AUDIT and FAMILY INVOLVEMENT. FAMILYOWNED and FAMILY INVOLVEMENT are our



primarily independent variables of interest while AUDIT is a tool to separate our sample into two groups. The first series are general regression models that use COST as the dependent variable. We employ two critical independent variables of interest with control variables in our models, doing tests in two groups: the first for those engaging in external auditing and the second for those who did not. The second series comprises the same regression models as the first, except we use five years as the cutoff point to do the same tests in different subsamples. There is solid ground for including the effect of a firm's age because as Diamond (1991) points out, firm age affects debt financing.

The models used in this study are organized into sequences. First, we separated our sample into two groups based on the value of AUDIT. We arrived at two groups when AUDIT=1 or AUDIT=0 is employed. We only used control variables to construct a base model. Second, we use these two groups to perform the following tests to examine the differences in results:

First, we test family ownership solely in Model 1:

$$\text{COST} = a_0 + a_1 \text{FAMILY OWNED} + a_2 \text{Control Variables} + \text{error (Model 1)}$$

Then, we capture the interactive effects of family ownership and family management by employing FAMILY INVOLVEMENT for Model 2. Based on this new variable, we construct Model 2 as shown below:

$$\text{COST} = b_0 + b_1 \text{FAMILY INVOLVEMENT} + b_2 \text{Control Variables} + \text{error (Model 2)}$$

In the second part of our empirical tests, we re-run the models mentioned above under the

control of different firms' age. Specifically, we use five years as the cutoff point to separate our groups into two subsamples: firms that are less than five years and firms that are more than five years old.

In addition, we winsorize all variables at 1% and 2.5% respectively and redo the tests noted above. This process is designed to reduce the effect of potential spurious outliers statistically.

#### **IV. Results and Discussions**

The descriptive analysis and correlation matrix for all the variables presented in Table 4, Table 5 and Table 6. Table 7 show the regression results for the relationship between the cost of debt and the family involvement variable under different circumstances depending on whether or not external auditing was performed. Table 8 shows the regression results for the same interested relationship shown in Table 7. The only difference is that two subsamples are used. Table 9 and Table 10 present the regression results with all variables winsorized at the 1% level. Table 11 and Table 12 show the regression results with all variables winsorized at the 2.5% level.

##### ***Relationship between family involvement and cost of debt***

The results of the base model are shown in Table 7. In the base model, the weighed average education level of owners and the total assets of small firms show a positive influence on borrowing cost ( $p < 0.001$ ). These relationships remain significant ( $p < 0.05$ ) when the AUDIT equals zero in Model 1 and Model 2; however, when AUDIT equals one they become insignificant. EMPLOYEE as well is significant ( $p < 0.1$ ) and is positively associated with the cost of debt. It is also significant though when AUDIT equals one ( $p < 0.1$ ) and is insignificant when AUDIT equals zero. LNTA and EMPLOYEE both are proxies for the size of a small firm.

These results indicate that the larger a small firm is, the lower the interest rate it will be charged. The positive association between borrowing cost and total assets, and between borrowing cost and the number of employees is consistent with the results of Wu and Chua's study (2012). COMPANY is negatively associated with cost of debt ( $p < 0.1$ ) and is significant too when AUDIT equals one ( $p < 0.01$  in Model 1;  $p < 0.005$  in Model 2). FEMALE has a positive relationship with the borrowing cost ( $p < 0.1$ ).

When a firm partakes in external auditing, the regression models shown in Table 7 have an adjusted  $R^2$  of 0.34 ( $p < 0.001$ ) and 0.33 ( $p < 0.001$ ) for Model 1 and Model 2 respectively. In addition, the F-statistics for Model 1 and Model 2 are significant ( $p < 0.001$ ). Nevertheless, the coefficient of FAMILYOWNED is insignificant in Model 1, an insignificance that supports H1. Moreover, in Model 2, the coefficient of FAMILY INVOLVEMENT is insignificant too. These results jointly confirm our H1: when external auditing is performed, family involvement is not a significant influencer in reducing the cost of debt for small businesses. For control variables, the coefficients of EMPLOYEE and COMPANY are significant in Model 1. The coefficient of EMPLOYEE is -0.005 ( $p < 0.1$ ), indicating that small firms with more employees enjoy lower interest rates if they engage in external auditing. Also, the coefficient of COMPANY is 5.127 ( $p < 0.05$ ). The positive sign suggests that under the same circumstance as above, when one of owners of the small firm is a company, the firm will be charged a higher interest rate. In Model 2, EMPLOYEE and COMPANY are still significant (EMPLOYEE,  $p < 0.1$ ; COMPANY,  $p < 0.001$ ). When external auditing is performed, the number of employees is still a factor in determining the cost of debt. Interestingly, if one of the owners is a company, it will negatively relate to the borrowing cost under the same circumstances.

On the other hand, when external auditing is not performed, FAMILYOWNED is positively

related to borrowing cost ( $p < 0.05$ ). In addition, FAMILY INVOLVEMENT is positively associated with the cost of debt in Model 2 ( $p < 0.1$ ). H2 is supported by these results. In Model 1, the control variables LNTA, EDUCATION and CORPORATION are positively associated with the borrowing cost (LNTA,  $p < 0.001$ ; EDUCATION,  $p < 0.05$ ; CORPORATION,  $p < 0.1$ ). The results of these three variables are the same in Model 2. The total assets of a small firm have a positive influence on the cost of debt that is consistent with the results from the base model. Furthermore, the higher the weighted average level of education of the owners, the more likely it is a small firm will be charged a lower interest rate. However, previous studies have noted that general education is not a significant determinant of success for small firms (Chrisman, McMullan, & Hall, 2005). Interestingly, when the small firm is a corporation, it enjoys a lower interest rate. This result is consistent with the research results of Peterson and Rajan (2012).

### ***Relationship between liability of newness and cost of debt***

The results of regression Model 1 and Model 2 run in different subsamples are presented in Table 8. To test our H3, we only use the small firms that chose not be audited by a professional accountant. Five years was the cutoff point to separate our full samples into two subsamples. The F-statistics for all four tests are significant while Model 1 and Model 2 in the subsample of small firms that is less than or equal to five years are significant at the 10% level. The other two tests are significant at a 0.1% level. The Model 1 for less than five years and more than five years has adjusted  $R^2$  of 0.140 and 0.142 respectively ( $p < 0.05$ ;  $p < 0.001$ ). FAMILYOWNED is shown to be positively associated with borrowing cost ( $p < 0.1$ ) when the firm's age is less than or equal to five years. However, when a small firm is five years or older, the association becomes insignificant. Moreover, the Model 2 run in the two subsamples has adjusted  $R^2$  of 0.143 and

0.142 respectively ( $p < 0.05$ ;  $p < 0.001$ ). In Model 2, FAMILY INVOLVEMENT is significant as well and is positively associated with cost of debt ( $p < 0.1$ ) when a small firm's age is less than or equal to five years. It becomes insignificant when the business grows older.

These results not only confirm Chua et al.'s (2011) conclusion that family involvement increases new ventures' ability to acquire loans, but also support our H3. In other words, when external auditing is not performed, family involvement reduces the cost of debt only when the liability of newness is a factor. Specifically, when a small firm's age is less or equal to five years, family ownership and management both have positive influences on cost of debt. While a small firm's age is more than five years, the influences disappear.

#### ***Robustness tests with winsorizing***

To control the potential effects of the extreme values in the sample, we conduct a series of robustness tests with all variables winsorized at different levels. First, we winsorize all variables at 1% level. Table 9 and 10 show no qualitative difference regarding the primary independent variables FAMILYOWNED and FAMILY INVOLVEMENT. Nevertheless, one can see in Table 9 that when external auditing is excluded, FAMILYOWNED is significant at a 5% level in Model 1. This result is more significant than the same result from Table 7. Besides, all the F-statistics of the Models in Table 9 are significant at a 0.1% level. These results indicate that winsorizing has improved the significance level for all of the tests and confirmed the results of the tests more firmly. The control variables, EMPLOYEE and COMPANY, are no longer significant in the base model. CORPORATION is no longer significant either - even when external auditing is excluded. As Table 10 shows, the F-statistics in the four tests are significant at a 0.1% level. Compared to the F-statistics in Table 8, the significant level has been improved

for the results of subsample of firms less than or equal to five years old.

For the results with all variables winsorized at 2.5%, there is no qualitative difference between FAMILYOWNED and FAMILY INVOLVEMENT. All the F-statistics of models are significant at a 0.1% level as shown in Table 11. COMPANY is eliminated in all of the tests because of the collinearity that occurred after winsorizing all the variables at 2.5%. In Table 12, we can tell that all the F-statistics of the four tests are significant at a 0.1% level. And the relationships remain the same in Table 8 and 10. All the robustness tests results with all the variables winsorized show that the results we obtained from Table 7 and 8 are consistent after eliminating the effect of extreme values.

## **V. Conclusions and Limitations**

The purpose of this study is to determine the effect of family involvement on a small business's cost of debt both when external auditing is performed and when it is not, as well as to determine how the age of a business affects its cost of debt. We reviewed agency cost, family business, external auditing, and liability of newness literature to argue that family involvement has specific effects on endogenous agency problems and external auditing has specific effects on exogenous ones. At the same time, by considering how liability of newness may affect a small firm's ability to access loans, we bring up three rational hypotheses.

We use family ownership and management as measures of family involvement for these empirical tests. Based on the descriptive analysis, we find that family-owned small businesses tend to choose not to be audited by a professional accountant. We believe that this tendency matches the conclusions of literature that we reviewed: family-owned businesses have less serious agency problems. On these grounds, family-owned small businesses show less interest in

engaging external auditing to mitigate their agency problems than other businesses. We find that family involvement is not a factor in reducing the cost of debt for small firms when external auditing is performed (H1). However, family involvement is a significant factor when external auditing is excluded (H2). Furthermore, we find that when external auditing is not performed, family involvement reduces the cost of debt only when the liability of newness is a factor (H3).

The findings from this study make several contributions to current literature. First, they apply newly established behavioral agency theory to small business debt financing problems through the combined lens of traditional agency theory and socio-emotional wealth perspectives. Second, they help fill the gap in entrepreneurial finance literature by exploring how family involvement affects a firm's decision to execute external auditing. Third, they extend our knowledge how family involvement affects cost of debt specifically through external auditing, rather than just connecting family involvement to small firms' debt financing simply. Fourth, they hold important implications both for academic researchers and for practitioners in helping small business owners resolve difficulties with debt financing.

### ***Limitations***

Although we enhance the understanding of the effect of family involvement in small firms on cost of debt when external auditing is either performed or not, this study has several limitations. First, the data we use has several inherent deficits and drawbacks. As previously noted, the data is self-reported; consequently, a potential self-selection problem may exist at the first stage. Self-reported data is limited by its inability to be independently verified. Ultimately, we have to take what respondents say in interviews at face value. The limitations accompanied by self-reported data could include selective memory, telescoping, attribution, and exaggeration.

Second, we only employ the observations that report the loan interest rate for the sample used in this research, because of missing data. The lack of probability sampling prevents this research from making generalizations about the population we are studying. In addition, the lack of longitudinal data hinders this study from examining the long-term trend in the research questions in which we are interested. Third, we only include control variables from analysis and literature. We may not have included other potential factors that are essential working factors in our models. Besides, as literature on small businesses' debt financing develops, there may be other variables that will be included in future studies.

### ***Future Analysis***

More studies are required on the topic we researched. First, in future analysis, we could examine the same topics in an international setting. We only focus on evidence from U.S. data for now because we believe that evidence from the U.S. is most pertinent and suitable for our study. Nevertheless, global data should be examined in the future. Second, we did not include the effect of family ownership and management concentration due to the limitation of the data. Since our data was culled from self-reported survey responses, it is hard to obtain information on family ownership and management percentages. As a next step, research should consider this effect by focusing on the intervals of family ownership and management concentration and to what extent family involvement will affect a small business's debt financing when external auditing is either employed or not. Third, future research should examine whether cost of debt for small firms' debt financing relate to other economic, organizational, structural or owners' attributes and whether there are other measurements for debt financing. Although we have already included variables based on current literature, other possible factors should be added into



future studies to strengthen the current theory and improve the accuracy of its results. While we chose cost of debt as the measurement for small firms' debt financing, future research should pay more attention to the full dimensions of debt financing measurement. Fourth, to overcome the lack of longitudinal data, future analysis should focus on collecting consistent data from the same sample and designing long-term tests for this research topic. NSSBFs have been conducted four times since 1987: in 2003, 1998, 1993, and 1987. Working papers and methodology reports; codebooks and other related documentation; and full public data sets are all available for the four NSSBFs. Future research should focus on including long term data and examining trends using longitudinal data. While small businesses are rapidly growing, and more reflective data are needed nowadays, future analysis could engage the most recent and valuable dataset. Finally, researchers should conduct studies based on data considering other dimensions of family involvement. We only incorporated two dimensions of the concept of family involvement that Chua et al. (2011) devised due to limited data. Future analysis could select data and samples based on other dimensions to further this study.

## Tables

Table 1 Variable List

Variable name	Description
COST	Interest rate charged on the most recently approved loans
AUDIT	=1 if the external auditing is engaged
FAMILYOWNED	=1 if the small firm owned by a family
FAMILY INVOLVEMENT	=1 if the owner is also the manager in the family-owned small firms
OWNMANAGE	=1 if the owner is also the manager
FEMALE	=1 if at least one of the owners is a female
LNTA	Log of total assets
LNLOAN	Log of total loans
LENGTH	The length of small firms conduct business with the bank
EMPLOYEE	The number of employees
OWNERAGE	Weighted average age of owners
EXPERIENCE	Weighted average years owner's work experience
EDUCUCATION	Weighted average years Owner's education level
COMPANY	=1 if one of the owners is another company
CORPORATION	=1 if the firm is a corporation

Table 2 Dummy variable FAMILYOWNED statistics

FAMILYOWNED	N	Percentage
0	417	23.95%
1	1,324	76.05%
Total	1,741	100%

Table 3 Dummy Variable AUDIT statistics

AUDIT	N	Percentage
0	1,591	91.38%
1	150	8.62%
Total	1,741	100%

Table 4 Descriptive Statistics of the sample

	Mean	SD	n	Min	Max	25 percentile	75 percentile
COST	5.866	2.611	1,741	0.5	30	4.3	7
AUDIT	0.086	0.281	1,741	0	1	0	0
FAMILYOWNED	0.760	0.427	1,741	0	1	1	1
FAMILY INVOLVEMENT	0.765	0.424	1,741	0	1	1	1
OWNMANAGE	0.855	0.353	1,741	0	1	1	1
FEMALE	0.294	0.456	1,741	0	1	0	1
LNTA	13.519	2.123	1,731	6.215	19.275	12.002	15.099
LNLOAN	12.983	2.228	1,315	4.025	19.192	11.415	14.683
LENGTH	113.028	126.380	1,741	0	1155	24	165
EMPLOYEE	51.435	73.164	1,741	0	485	4	70
OWNERAGE	53.267	10.390	1,700	19	87	46	60
EXPERIENCE	22.731	10.927	1,700	0	65	15	30
EDUCATION	4.767	1.838	1,700	1	7	3	6
COMPANY	0.020	0.140	1,741	0	1	0	0
CORPORATION	0.764	0.425	1,741	0	1	1	1

SD: Standard Deviation

Table 5 Descriptive Statistics with AUDIT=0 or 1

	AUDIT=0			AUDIT=1			Differences in Means	Wilcoxon rank-sum test z value
	Mean	SD	n	Mean	SD	n		
COST	5.925	2.625	1,591	5.245	2.373	150	0.679***	3.342***
FAMILY	0.772	0.420	1,591	0.640	0.482	150	0.132***	3.616***
FAMILY INVOLVEMENT	0.683	0.466	1,591	0.540	0.500	150	0.143***	3.550***
OWNMANAGE	0.859	0.349	1,591	0.813	0.391	150	0.045	1.503
FEMALE	0.299	0.458	1,591	0.240	0.429	150	0.059	1.520
LNTA	13.389	2.084	1,581	14.894	2.053	150	-1.506***	-8.207***
LNLOAN	12.835	2.186	1,189	14.380	2.141	126	-1.545***	-7.411***
LENGTH	111.308	125.186	1,591	131.267	137.543	150	-19.959	-1.830
EMPLOYEE	48.096	70.705	1,591	86.853	88.216	150	-38.757***	-6.690***
OWNERAGE	53.035	10.305	1,557	55.790	10.999	143	-2.755***	-2.668**
EXPERIENCE	22.486	10.786	1,557	25.392	12.075	143	-2.905***	-2.493*
EDUCATION	4.750	1.840	1,557	4.951	1.817	143	-0.201	-1.108
COMPANY	0.017	0.129	1,591	0.053	0.225	150	-0.036***	-3.032**
CORPORATION	0.755	0.430	1,591	0.860	0.348	150	-0.105***	-2.898**

\*\*\*significant at 0.1% level

\*\* significant at 1%level

\* significant at 5%level

SD: Standard Deviation

Table 6 Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)	1													
(2)	0.056*	1												
(3)	-0.073**	-0.069***	1											
(4)	0.087***	0.158***	-0.059***	1										
(5)	0.022	0.104***	-0.026	0.049**	1									
(6)	-0.356***	-0.256***	0.193***	-0.260***	-0.155***	1								
(7)	-0.334***	-0.264***	0.193***	-0.245***	-0.144***	0.898***	1							
(8)	-0.098***	0.017	0.047*	-0.044	-0.030	0.135***	0.099***	1						
(9)	-0.248***	-0.214***	0.160***	-0.217***	-0.080***	0.580***	0.584***	0.052*	1					
(10)	-0.180***	0.022	0.046**	-0.198***	-0.013	0.170***	0.150***	0.244***	0.116***	1				
(11)	-0.197***	0.023**	0.069***	-0.168***	-0.166***	0.315***	0.236***	0.284***	0.196***	0.674***	1			
(12)	-0.118***	-0.135***	0.013	-0.020	-0.055***	0.047**	0.063**	-0.047*	0.070***	0.053***	-0.031*	1		
(13)	-0.012	-0.157***	0.075***	-0.141***	-0.031*	0.137***	0.125***	0.021	0.103***	0.054***	0.044**	0.043**	1	
(14)	-0.145***	-0.172***	0.092***	-0.137***	-0.077***	0.438***	0.413***	0.044*	0.296***	0.073***	0.145***	0.055***	0.049**	1

\*\*\*significant at 0.1% level

\*\* significant at 1% level

\* significant at 5% level

List of variables: (1) COST (2) FAMILYOWNED (3) AUDIT (4) OWNMANAGE (5) FEMALE (6) LNTA (7) LNLOAN (8) LENGTH (9) EMPLOYEE (10) OWNERAGE (11) EXPERIENCE (12) EDUCATION (13) COMPANY (14) CORPORATION

Table 7 Regression on borrowing of cost on the control of external auditing

			AUDIT=1				AUDIT=0			
	Base Model		Model 1		Model 2		Model 1		Model 2	
	Coef	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
FAMILYOWNED			-0.215	0.451			-0.443*	0.185		
FAMILY INVOLVEMENT					0.108	0.410			-0.318§	0.165
OWNMANAGE			0.839	0.535			-0.025	0.223		
FEMALE	-0.346*	0.152	-0.585	0.479	-0.581	0.483	-0.257	0.161	-0.274§	0.161
LNTA	-0.269**	0.090	-0.311	0.287	-0.350	0.289	-0.306***	0.096	-0.307***	0.096
LNLOAN	-0.074	0.072	0.102	0.238	0.156	0.238	-0.085	0.076	-0.083	0.076
LENGTH	-0.000	0.001	-0.001	0.001	-0.000	0.001	-0.000	0.001	-0.000	0.001
EMPLOYEE	-0.002§	0.001	-0.005§	0.002	-0.005§	0.003	-0.002	0.001	-0.002	0.001
OWNERAGE	-0.057	0.046	0.089	0.157	0.097	0.158	-0.074	0.049	-0.062	0.049
OWNERAGESQ	0.000	0.000	-0.001	0.001	-0.001	0.001	0.001	0.000	0.000	0.000
EXPERIENCE	-0.007	0.009	-0.001	0.027	-0.000	0.027	-0.005	0.010	-0.006	0.009
EDUCATION	-0.136***	0.040	-0.165	0.118	-0.152	0.119	-0.130**	0.043	-0.126**	0.043
COMPANY	1.012§	0.598	5.127**	1.596	5.505***	1.593	0.295	0.650	0.305	0.649
CORPORATION	-0.227	0.173	0.251	0.657	0.291	0.660	-0.020§	0.176	-0.312§	0.182
Sales	Yes		Yes		Yes		Yes		Yes	
Profit	Yes		Yes		Yes		Yes		Yes	
Industry	Yes		Yes		Yes		Yes		Yes	
Region	Yes		Yes		Yes		Yes		Yes	
n	1,267		117		117		1,150		1,150	
F value	8.41***		2.76***		2.71***		6.99***		7.13***	
R <sup>2</sup>	0.179		0.533		0.519		0.176		0.174	
Adjusted R <sup>2</sup>	0.158		0.340		0.327		0.151		0.150	

\*\*\*significant at 0.1% level

\*\* significant at 1%level

\* significant at 5%level

§ significant at 10% level

SE: Standard Error



Table 8 AUDIT=0 at different firm age

	Model 1		Model 2	
	<=5	>5	<=5	>5
Firms' age (years)				
	Coef.	Coef.		
FAMILYOWNED	-1.433 <sup>*</sup>	-0.234		
FAMILY INVOLVEMENT			-1.396 <sup>*</sup>	-0.129
Control Variables	Yes	Yes	Yes	Yes
Sales	Yes	Yes	Yes	Yes
Profit	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Region	Yes	Yes	Yes	Yes
n	154	996	154	996
F value	1.73 <sup>*</sup>	5.84 <sup>***</sup>	1.77 <sup>*</sup>	5.99 <sup>***</sup>
R <sup>2</sup>	0.330	0.171	0.328	0.171
Adjusted R <sup>2</sup>	0.140	0.142	0.143	0.142

\*\*\*significant at 0.1% level

\*\* significant at 1%level

\* significant at 5%level

§ significant at 10% level

Table 9 Regression on borrowing of cost on the control of external auditing (winsorising at 1%)

			AUDIT=1				AUDIT=0			
	Base Model		Model 1		Model 2		Model 1		Model 2	
	Coef	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
FAMILYOWNED			-0.174	0.443			-0.392**	0.168		
FAMILY INVOLVEMENT					0.135	0.403			-0.287§	0.150
OWNMANAGE			0.805	0.533			-0.045	0.202		
FEMALE	-0.334*	0.139	-0.540	0.474	-0.540	0.476	-0.252§	0.146	-0.266§	0.146
LNTA	-0.216**	0.083	-0.223	0.294	-0.271	0.295	-0.254***	0.088	-0.255***	0.088
LNLOAN	-0.085	0.067	0.105	0.239	0.162	0.238	-0.096	0.088	-0.093	0.070
LENGTH	-0.000	0.001	-0.001	0.001	-0.001	0.001	-0.000	0.001	-0.000	0.001
EMPLOYEE	-0.003	0.001	-0.008**	0.003	-0.008**	0.003	-0.002	0.001	-0.002	0.001
OWNERAGE	-0.056	0.047	0.095	0.160	0.105	0.161	-0.076	0.051	-0.065	0.050
OWNERAGESQ	0.000	0.000	-0.001	0.001	-0.001	0.001	0.001	0.000	0.000	0.000
EXPERIENCE	-0.009	0.008	-0.001	0.027	0.001	0.027	-0.007	0.009	-0.009	0.009
EDUCATION	-0.135***	0.037	-0.179	0.116	-0.165	0.117	-0.127***	0.039	-0.124**	0.039
COMPANY	1.025	0.546	4.917**	1.588	5.279***	1.581	0.294	0.590	0.305	0.589
CORPORATION	-0.212	0.158	0.364	0.655	0.400	0.657	-0.292	0.165	-0.295	0.165
Sales	Yes		Yes		Yes		Yes		Yes	
Profit	Yes		Yes		Yes		Yes		Yes	
Industry	Yes		Yes		Yes		Yes		Yes	
Region	Yes		Yes		Yes		Yes		Yes	
n	1,267		117		117		1,150		1,150	
F value	9.07***		2.85***		2.82***		7.54***		7.71***	
R <sup>2</sup>	0.191		0.542		0.529		0.187		0.186	
Adjusted R <sup>2</sup>	0.170		0.352		0.341		0.162		0.162	

\*\*\*significant at 0.1% level

\*\* significant at 1%level

\* significant at 5%level

§ significant at 10%level

SE: Standard Error

Table 10 AUDIT=0 at different firm age (winsorising at 1%)

	Model 1		Model 2	
	<=5	>5	<=5	>5
Firms' age (years)				
	Coef.	Coef.		
FAMILYOWNED	-1.029*	-0.255		
FAMILY INVOLVEMENT			-1.112*	-0.155
Control Variables	Yes	Yes	Yes	Yes
Sales	Yes	Yes	Yes	Yes
Profit	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Region	Yes	Yes	Yes	Yes
n	154	996	154	996
F value	2.38***	5.93***	2.44***	6.08***
R <sup>2</sup>	0.405	0.173	0.401	0.173
Adjusted R <sup>2</sup>	0.234	0.144	0.237	0.144

\*\*\*significant at 0.1% level

\*\* significant at 1%level

\* significant at 5%level

Table 11 Regression on borrowing of cost on the control of external auditing (winsorising at 2.5%)

			AUDIT=1				AUDIT=0			
	Base Model		Model 1		Model 2		Model 1		Model 2	
	Coef	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
FAMILYOWNED			-0.193	0.417			-0.375*	0.158		
FAMILY INVOLVEMENT					0.153	0.384			-0.291*	0.140
OWNMANAGE			0.865	0.506			-0.072	0.188		
FEMALE	-0.319*	0.130	-0.557	0.454	-0.551	0.458	-0.241	0.137	-0.253	0.136
LNTA	-0.173*	0.079	-0.181	0.286	-0.226	0.288	-0.203**	0.084	-0.204*	0.084
LNLOAN	-0.096	0.064	0.151	0.230	0.212	0.231	-0.111	0.067	-0.109	0.067
LENGTH	0.000	0.001	-0.001	0.001	-0.000	0.002	0.000	0.001	0.000	0.001
EMPLOYEE	-0.004	0.001	-0.011**	0.004	-0.011**	0.004	-0.003	0.001	-0.003	0.001
OWNERAGE	-0.051	0.049	0.096	0.166	0.113	0.168	-0.070	0.053	-0.059	0.052
OWNERAGESQ	0.000	0.000	-0.001	0.001	-0.001	0.001	0.001	0.000	0.000	0.000
EXPERIENCE	-0.010	0.008	0.001	0.027	0.003	0.027	-0.008	0.008	-0.009	0.008
EDUCATION	-0.136***	0.034	-0.201	0.112	-0.186	0.113	-0.127***	0.036	-0.124***	0.036
COMPANY	-	-	-	-	-	-	-	-	-	-
CORPORATION	-0.201	0.148	0.416	0.628	0.466	0.631	-0.265	0.154	-0.268	0.155
Sales	Yes		Yes		Yes		Yes		Yes	
Profit	Yes		Yes		Yes		Yes		Yes	
Industry	Yes		Yes		Yes		Yes		Yes	
Region	Yes		Yes		Yes		Yes		Yes	
n	1,267		117		117		1,150		1,150	
F value	9.45***		2.51***		2.44***		7.84***		8.03***	
R <sup>2</sup>	0.192		0.500		0.482		0.188		0.187	
Adjusted R <sup>2</sup>	0.170		0.301		0.284		0.164		0.164	

\*\*\*significant at 0.1% level

\*\* significant at 1%level

\* significant at 5%level

SE: Standard Error

Table 12 AUDIT=0 at different firm age (winsorising at 2.5%)

	Model 1		Model 2	
	<=5	>5	<=5	>5
Firms' age (years)				
	Coef.	Coef.		
FAMILYOWNED	-0.979*	-0.262		
FAMILY INVOLVEMENT			-1.046*	-0.176
Control Variables	Yes	Yes	Yes	Yes
Sales	Yes	Yes	Yes	Yes
Profit	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Region	Yes	Yes	Yes	Yes
n	154	996	154	996
F value	2.35***	6.31***	2.41***	6.48***
R <sup>2</sup>	0.393	0.178	0.389	0.177
Adjusted R <sup>2</sup>	0.226	0.150	0.228	0.150

\*\*\*significant at 0.1% level

\*\* significant at 1%level

\* significant at 5%level

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